What is claimed is:

1. A thermoelectric module comprising:

an object to be heated or cooled having a surface;

at least one electrically conductive lower pad bonded directly to said surface of said object with a thermally conductive dielectric material;

at least one thermoelectric element coupled on one end to said at least one electrically conductive pad; and

at least one electrically conductive upper pad coupled to an opposite end of said at least one thermoelectric element; and

electrical power connections coupled to said module.

2. The module of Claim 1 further comprising a substrate disposed on said at least one electrically conductive upper pad.

3. The module of Claim 1 further comprising a second object to be heated or cooled having a surface bonded directly to said at least one electrically conductive upper pad.

4. The module of Claim 1 wherein said thermally conductive dielectric material is any thermally conductive material capable of bonding said at least one conductive lower pad to said surface.

5. The module of Claim 4 wherein said thermally conductive dielectric material is a thermally conductive dielectric adhesive.

6. The module of Claim 4 wherein said thermally conductive dielectric material is a thermally conductive dielectric polymer.

7. The module of Claim 1 wherein said module is a single polarity thermoelectric module.

8. The module of Claim 1 wherein said at least one thermoelectric element is selected from the group consisting of a P-type thermoelectric element and an N-type thermoelectric element.

9. A thermoelectric module comprising:

an object to be heated or cooled, said object having a surface;

an array of electrically conductive lower pads bonded directly to said surface of said object with a thermally conductive dielectric material wherein said object provides the reinforcing structural integrity of a substrate;

at least one thermoelectric element coupled on one end to each of said array of electrically conductive lower pads forming an array of thermoelectric elements;

a plurality of electrically conductive upper pads coupled to an opposite end of said array of thermoelectric elements; and

electrical power connections coupled to said module.

10. The module of Claim 9 further comprising a substrate disposed on said plurality of electrically conductive upper pads on said opposite end of said array of thermoelectric elements.

11. The module of Claim 9 further comprising a second object having a surface bonded directly to said plurality of electrically conductive upper pads on said opposite end of said array of thermoelectric elements.

12. The module of Claim 9 wherein said thermally conductive dielectric material is any thermally conductive dielectric material capable of bonding said array of electrically conductive lower pads to said surface.

13. The module of Claim 12 wherein said thermally conductive dielectric material is a thermally conductive dielectric adhesive.

14. The module of Claim 12 wherein said thermally conductive dielectric material is a thermally conductive dielectric polymer.

15. A direct bonded thermoelectric module comprising:

an object to be heated or cooled, said object having a surface;

electrically conductive means bonded directly to said surface of said object with a thermally conductive dielectric bonding means wherein said object provides the reinforcing structural integrity of a substrate in place of substrate;

at least one thermoelectric element coupled on one end to said electrically conductive means; and

electrical connection means coupled to an opposite end of said at least one thermoelectric element; and

electrical power means coupled to said module.

16. A method of making a thermoelectric module having an improved thermal efficiency, said method comprising:

direct bonding at least one electrically conductive lower pad to a surface of an object to be heated or cooled with a thermally conductive dielectric material;

electrically coupling at least one thermoelectric element on one end to said at least one electrically conductive lower pad;

electrically coupling at least on electrically conductive upper pad to an opposite end of said at least one thermoelectric element; and

electrically coupling electrical power connections to said module.

17. The method of Claim 16 further comprising bonding a thermally conductive substrate to said at least one electrically conductive upper pad.

18. The method of Claim 16 further comprising direct bonding a second object to be heated or cooled to said at least one electrically conductive upper pad.

19. A method for direct bonding of a thermoelectric element to an object to be heated or cooled, said method comprising:

forming at least one electrically conductive pad onto one side of a thermally conductive dielectric material;

placing said thermally conductive dielectric material against a surface of an object to be heated or cooled;

treating said thermally conductive dielectric material to cause said thermally conductive dielectric material to directly bond to said surface of said object; and

electrically coupling said thermoelectric element to said at least one electrically conductive pad.